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Indian Standard

SPECIFICATION FOR ANAESTHETIC FACE MASKS

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March 1972

Indian Standard

SPECIFICATION FOR ANAESTHETIC FACE MASKS

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SPECIFICATION FOR ANAESTHETIC FACE MASKS

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 15 June 1971, after the draft finalized by the Anaesthesia, Resuscitation and Allied Equipment Sectional Committee had been approved by the Consumer Products Division Council.

0.2 This standard has been formulated at the instance of the Advisory Committee for Development of Surgical Instruments, Equipment and Appliances, Government of India.

0.3 In the preparation of this standard, assistance has been derived from the following:

IND/GS/MED/1019-1964 Specification for apparatus anaesthetic face-mask (anti-static). Ministry of Defence, Government of India.

BS 2050 : 1961 Specification for electrical resistance of conductive and anti-static products made from flexible polymeric material. British Standards Institution.

BS 2091 : 1969 Specification for respirators for protection against harmful dusts, gases and scheduled agricultural chemicals. British Standards Institution.

0.4 This standard is one of a series of Indian Standards on diagnostic and anaesthetic equipment.

0.5 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes the requirements for face masks used in gas anaesthesia.

***Rules for rounding off numerical values (** *wised* **).**

2. MATERIAL

2.1, The face masks shall be made from antistatic rubber which shall be able to withstand normal usage, exposure to moisture and tropical conditions. The material shall be nondermatitic.

3. CLASSES AND SIZES

3.1 The face masks shall be classified as infants', children's and adults' face masks. Each class shall have various sizes to fit the faces of infants, children or adults.

4. WORKMANSHIP AND FINISH

4.1 The surfaces of the face masks shall be smooth and free from grit, embedded foreign matter, air pockets, blisters, cracks and other manufacturing defects.

4.2 The joints shall be properly vulcanized. They shall be leakproof, strong and durable.

5. REQUIREMENTS

5.1 The face -mask shall have a female conical fitting conforming to 3.1 or 3.2 of IS : 5413-1969*.

5.2 The face mask shall be so designed and constructed as to ensure complete airtightness under respiratory conditions.

5.3 The electrical resistance of the face mask shall be between 5×10^4 and 10^6 ohms when measured by the method given in Appendix A.

5.4 When the face mask is immersed in formalin, prepared by putting one part of 40 percent formaldehyde solution in nine parts of water, at 27°C for 10 minutes, there shall be no visual deterioration of the face mask,

5.5 The face mask shall be capable of withstanding exposure to saturated steam at a temperature of 134°C corresponding to a gauge pressure of 2·2 kgf/cm^2 for not less than 20 minutes in a sterilizer without loss of shape or other significant deterioration.

6. MARKING

6.1 Each face mask shall be marked with the following:

a) Manufacturer's name, initials or recognized trade-mark;
b) The word ' Antistatic.'; and
c) Class and size of the face mask.

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*Spccitication for conical fittings for to-and-fro carbon dioxide absorber (water type) for use with gas anaesthetic apparatus.

6.1.1 The marking shall be done in yellow colour similar to Indian Standard colour No. 355 ' Lemon ' (see IS : 5-1961*).

6.2 The face mask may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the, Indian Standards Institution (Certification Marks) Act, and the Rules and Regulations made thereunder. Presence of this mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard, under a well-defined system of inspection, testing and quality control during production. This system, which is devised and supervised by ISI and operated by the producer, has the further safeguard that the products as actually marketed are continuously checked by ISI for conformity to the standard. Details of conditions, under which a licence for the use of the IS1 Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

7. PACKING

7.11 Each face mask shall be freely dusted with French chalk and placed in a suitable cardboard box, or the packing shall be done as agreed to between the purchaser and the supplier.

APPENDIX A

(*Clause* 5.3)

MEASUREMENT OF ELECTRICAL RESISTANCE

A-l. PREPARATION OF SAMPLE

A-l.1 The surfaces which are to be used in the test shall be cleaned properly, care being taken to avoid straining the material. The surfaces shall then be wiped with a pad moistened with distilled water and rubbed dry with a clean cloth.

A-2. TESTING INSTRUMENT

A-2.1 The test shall be carried out with an insulation tester having a nominal open circuit voltage of 500 V dc. The voltage shall be applied for no longer than necessary to carry out the test in order to reduce the risk of overheating the test piece.

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*Colours for ready mixed paints (second *revision*).

A-3. LIQUID ELECTRODES AND CONTACTS

A-3.1 Liquid electrode shall be formed on the surface by means of a conducting liquid having the following composition:

Anhydrous polyethylene glycol of mol wt 600	800 parts
Water	200 parts
Soft soap	1 part
Potassium chloride	10 parts

The electrode area shall be completely wetted and shall remain so till the end of the test. Clean metal contacts shall -be applied to the wetted areas so that the contact area is approximately of the same size but not greater than the wetted area. The surface of the face mask shall not be deformed either during the application of the contacts or during the test.

A-4. PROCEDURE

A-4.1 The liquid electrodes shall be applied to two areas, approximately 25 mm^2 each. The test areas shall be so located that the results represent the electrical resistance of the normal discharge path. The metal contacts shall then be applied to the wetted areas and the resistance measured.

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

QUANTITY	UNIT	SYMBOL
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

QUANTITY	UNIT	SYMBOL
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

QUANTITY	UNIT	SYMBOL	DEFINITION
Force	newton	N	1 N = 1 kg.m/s^2
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m^2
Frequency	hertz	Hz	1 Hz = 1 c/s (s^{-1})
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m^2

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